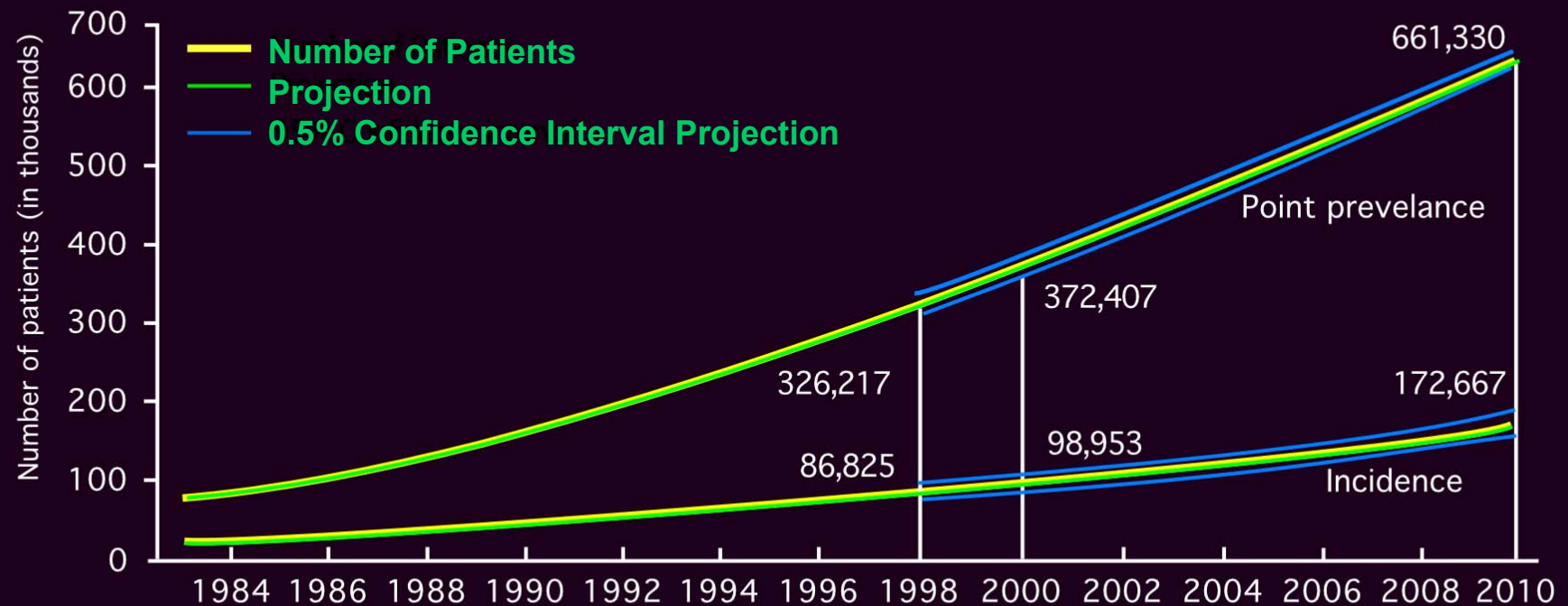
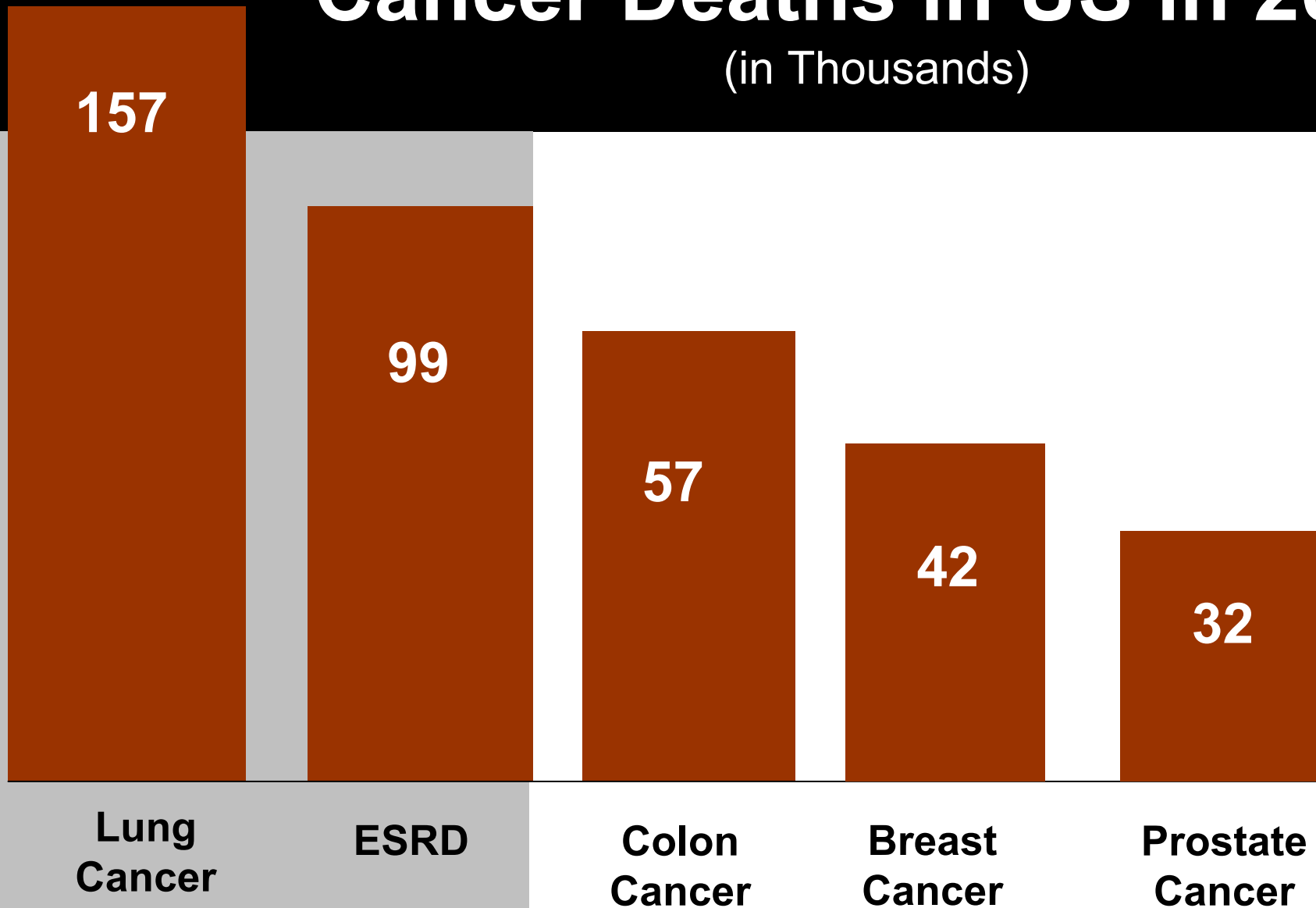


Number of Patients (in thousands)



Cancer Deaths in US in 2000

(in Thousands)

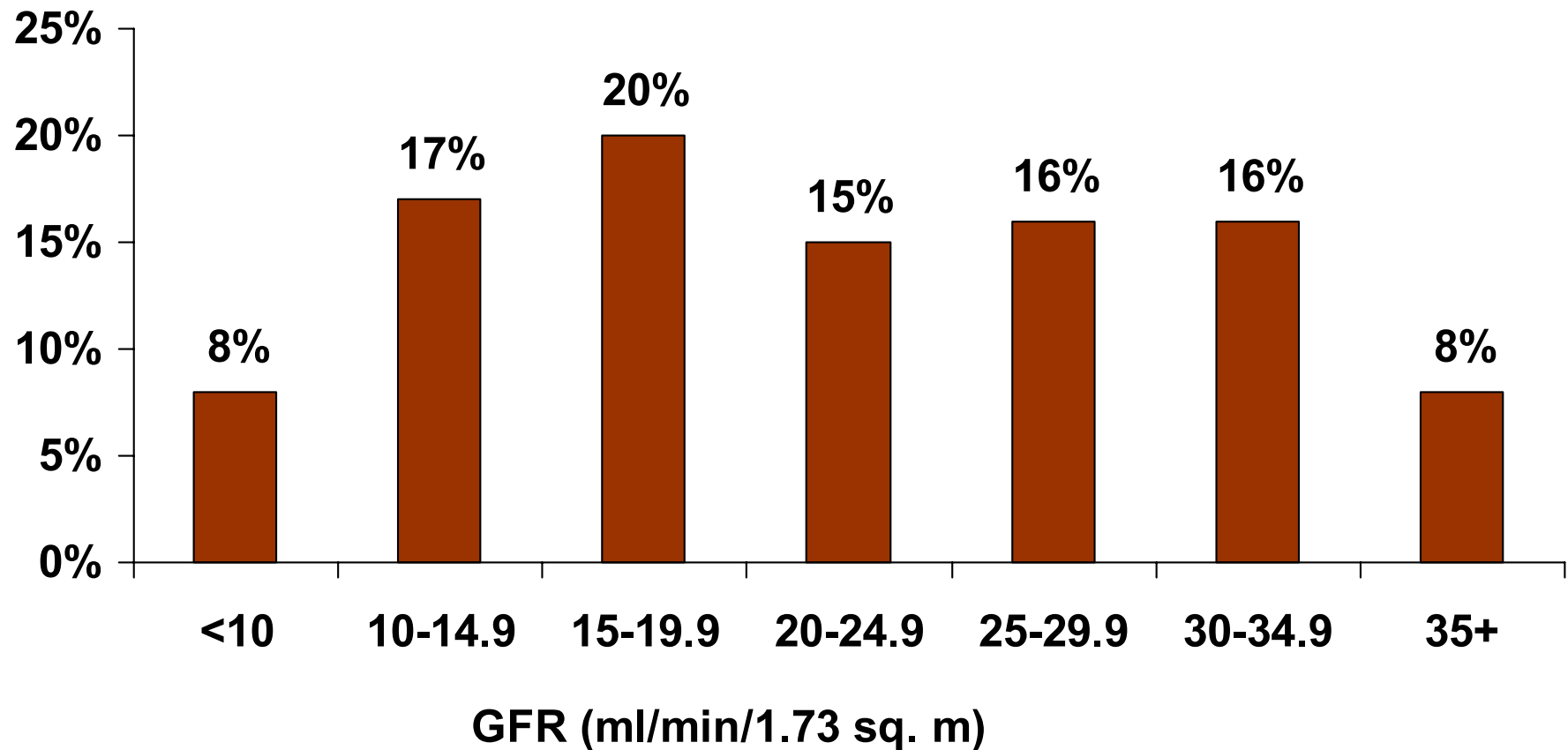


Prevalence of Renal Insufficiency in the U.S.

Serum Creatinine	<u>>1.5 mg/dl</u>	<u>>1.7 mg/dl</u>	<u>>2.0 mg/dl</u>
Number of People	10.9 million	3.0 million	.8 million


Jones, et al., AJKD, 1998

Glomerular Filtration Rate at the First Nephrology Visit



Pereira, et al.

Cardiovascular Disease (CVD) Is Linked to Chronic Kidney Disease (CKD)



Relative Risk of CVD is 1.4 – 2.05 X with
Creatinine > 1.4 – 1.5 mg/dl

Relative Risk of CVD is 1.5 – 3.5 X with
Microalbuminuria

Annual Mortality from CVD is 10 to 100-Fold Greater
with ESRD

Flack, et al.	1993
Levey, et al.	1998
Jensen, et al.	2000
Ruilope, et al.	2001
Mann, et al.	2001

Costs of ESRD Are High (in \$billions for 1999)

**ESRD
Care**

17.9

▼ ESRD Accounts for
6% of HCFA
Payments

▼ Lost Income for
Patients Is \$2-4
Billion/Yr

**Total NIH
Budget**

15.6

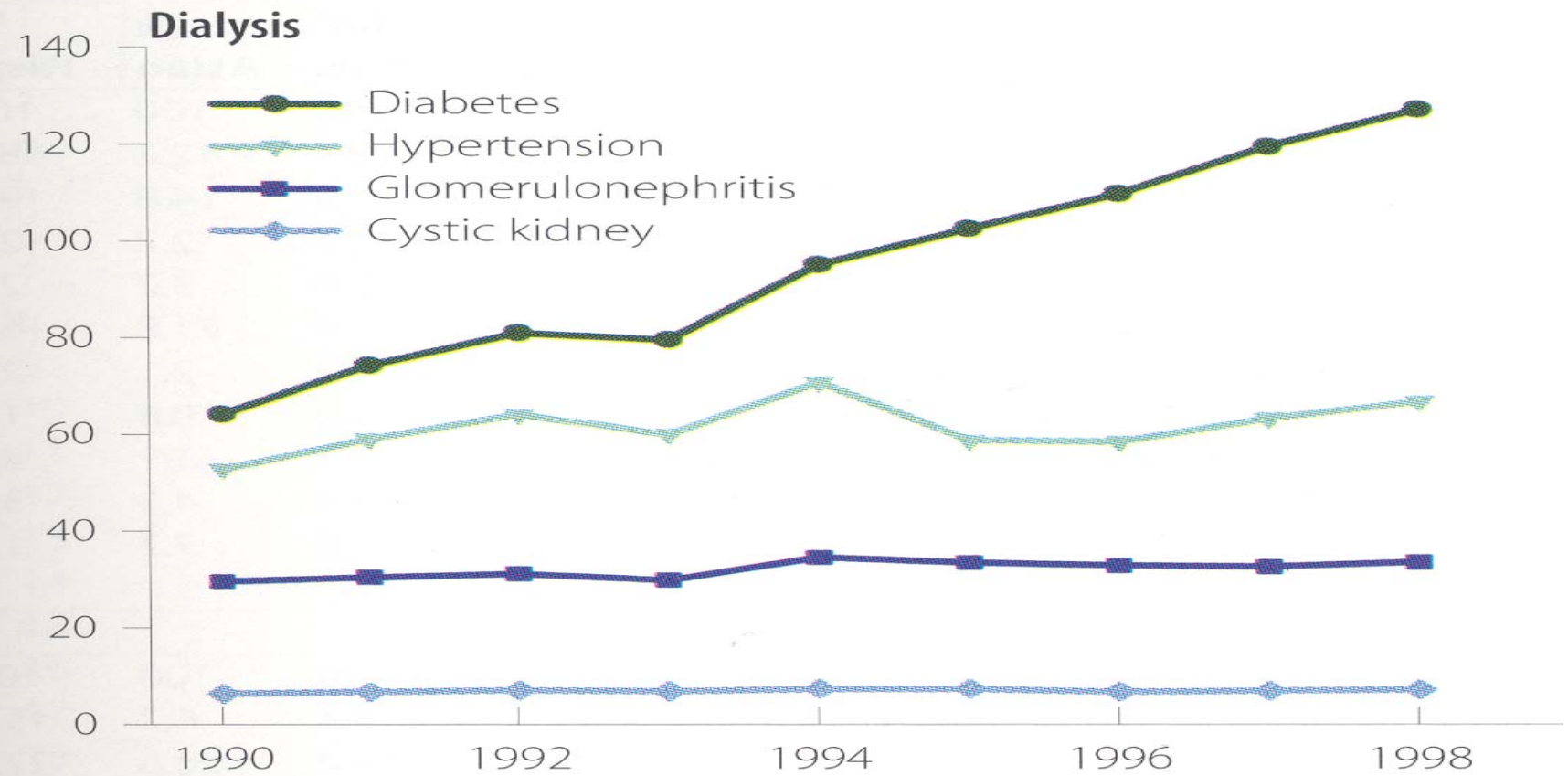
The Risk of ESRD Is Not Uniform

Relative Risks Compared to Whites:

African Americans	4.45 X
Native Americans	3.57 X
Asians	1.59 X

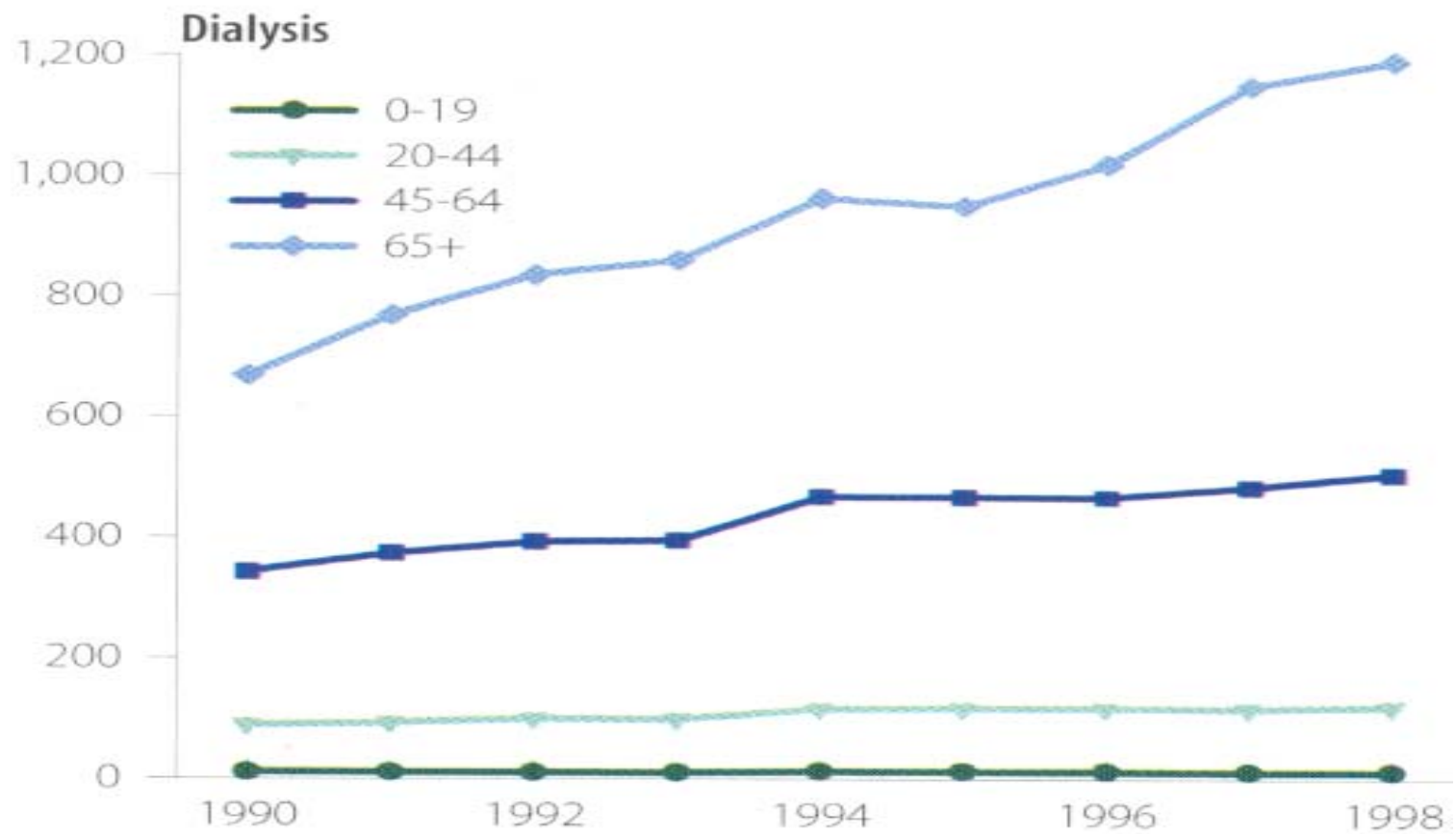
Xue, et al., 2000

Incident Rates by Primary Diagnosis (per million population, unadjusted)



Incident Rates by Age

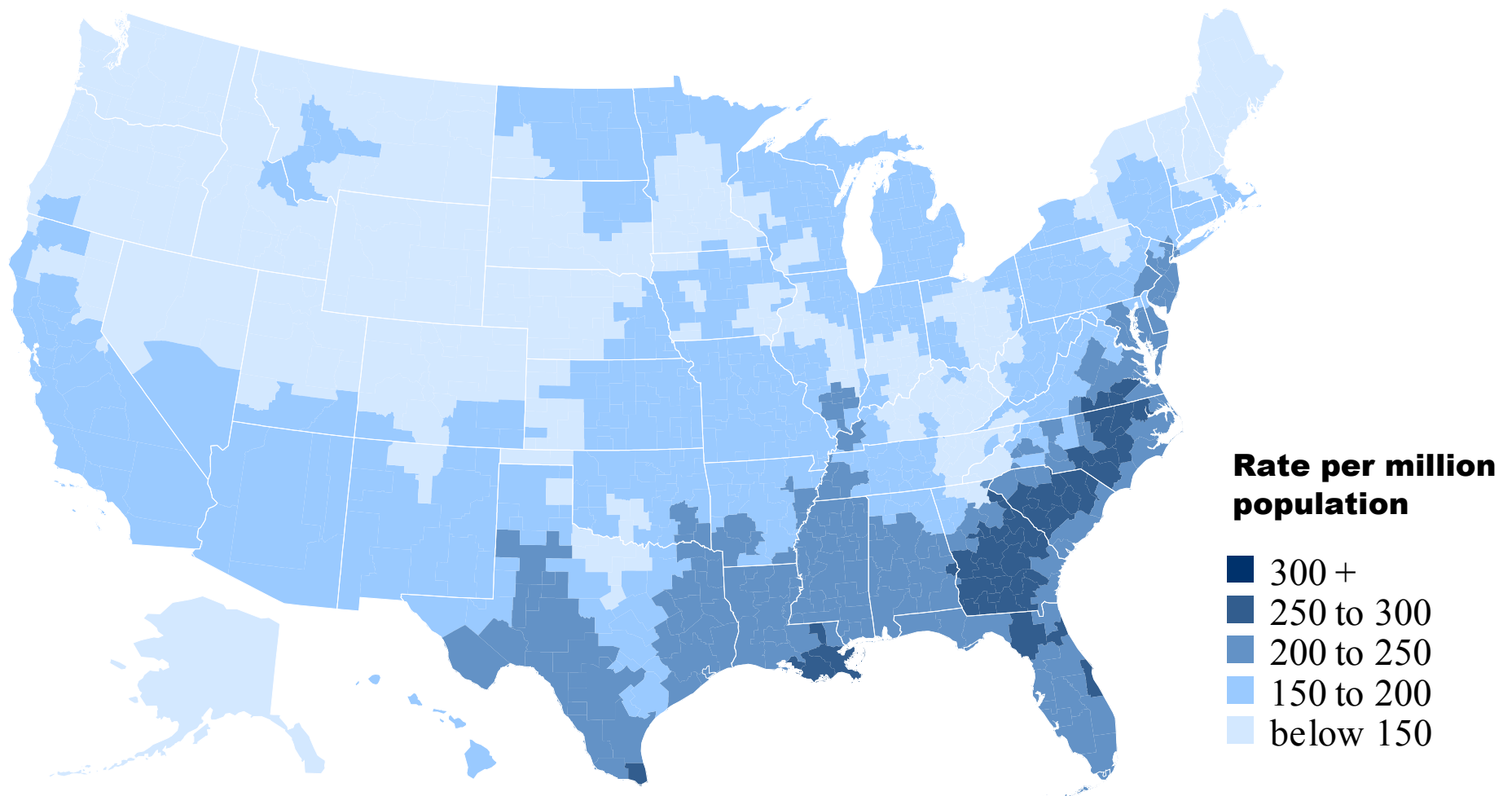
(per million population, unadjusted)



USRDS, 2000 Figure 1.11, Dialysis

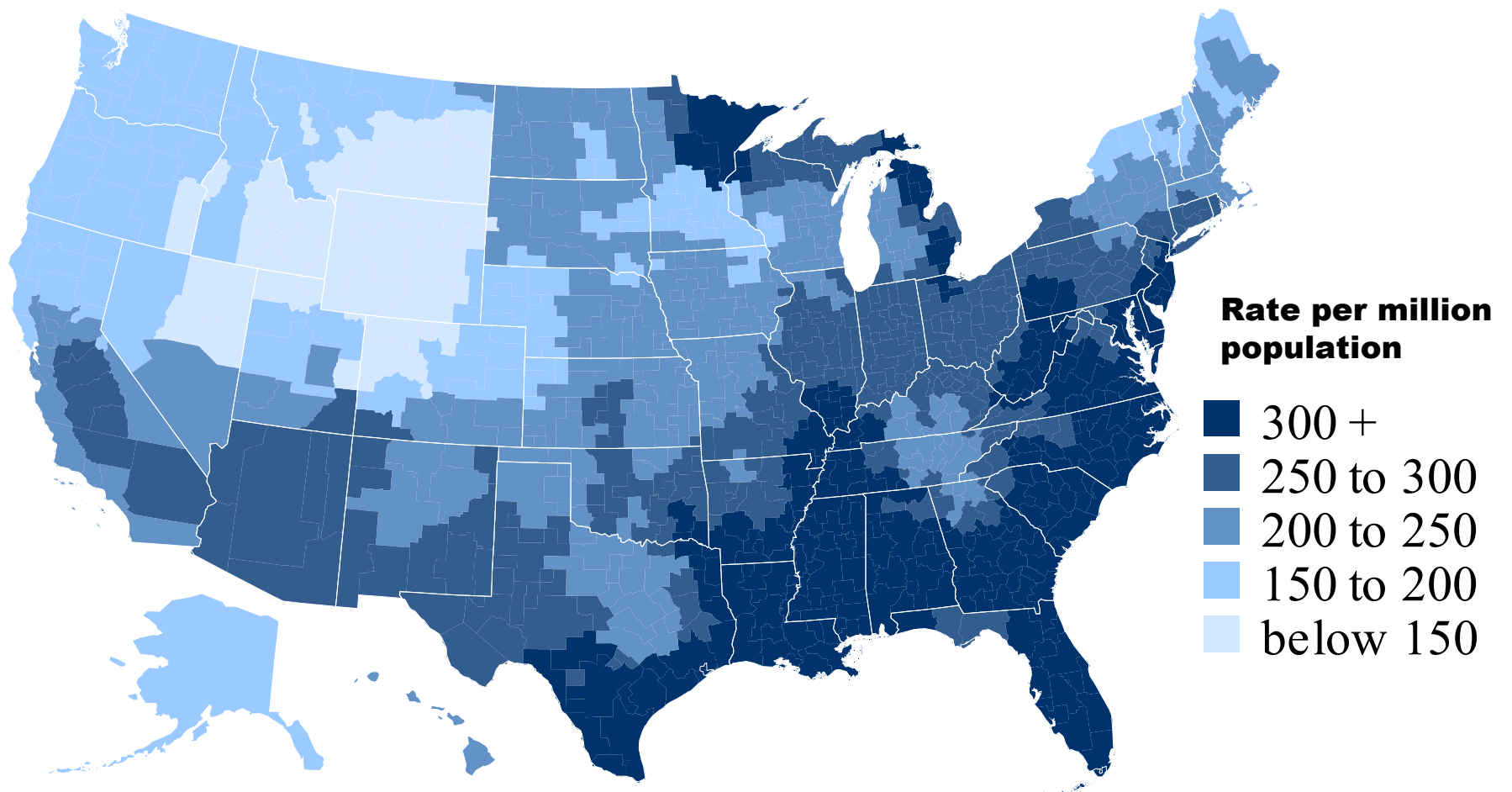
Incidence of ESRD

figure 1.2, per million population, 1990, by HSA, unadjusted



Incidence of ESRD

figure 1.2, per million population, 1998, by HSA, unadjusted



Prevention of CKD is Possible



Type II Diabetes Itself is Likely Preventable

Tuomilehto et al. 2001



Renal Complications of Type I and Type II Are Preventable

DCCT 1993

UKPDS 1998

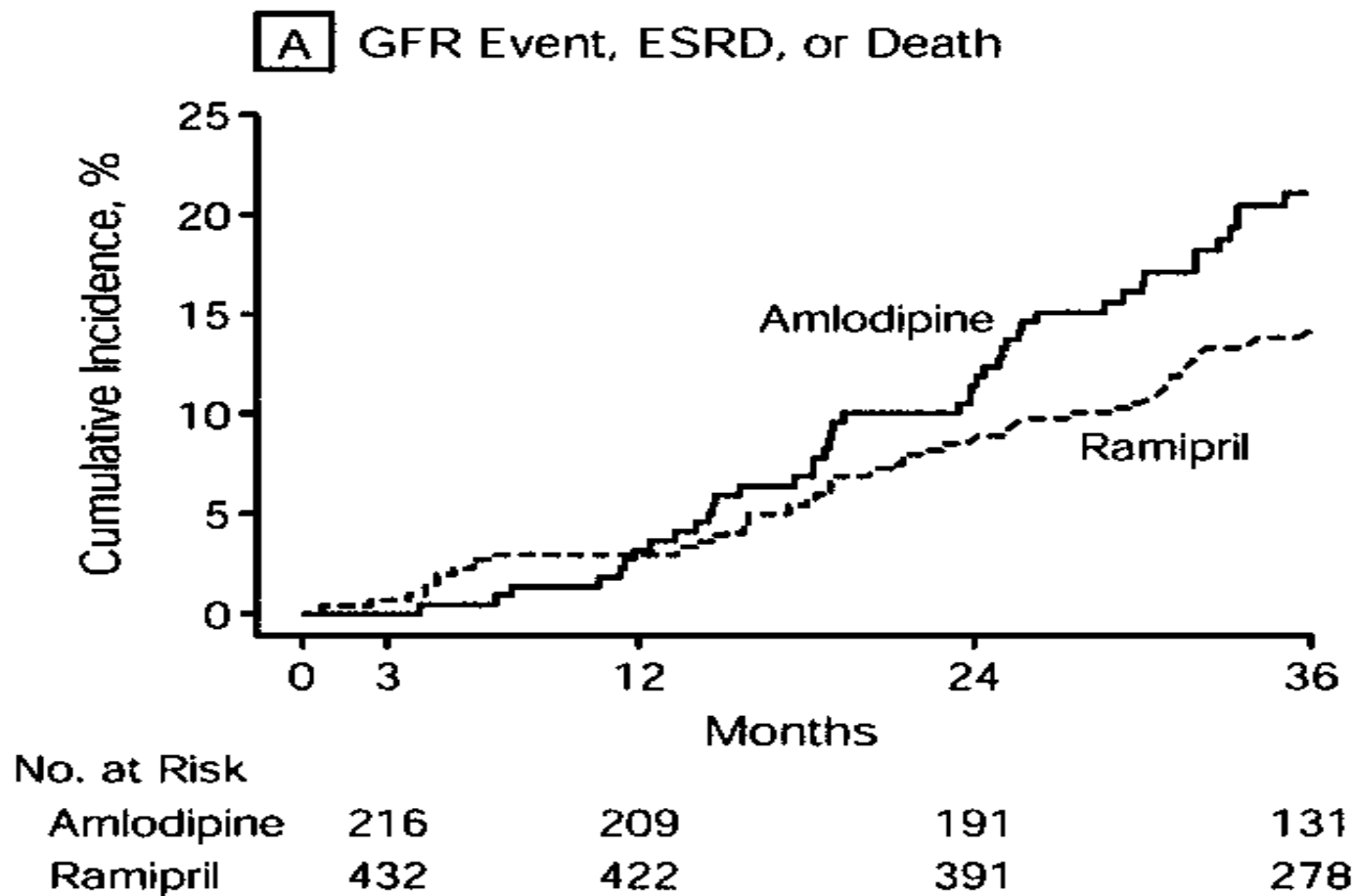


Hypertensive CKD is Likely Preventable



Prevention of Glomerulonephritis and Simple Mendelian Genetic Causes is Not Yet Possible.

AASK Trial Showed Greater Efficacy of ACE Inhibitor



Treatment of Progression of CKD to ESRD Is Effective

Antihypertensive Therapy with ACEI Lessens Proteinuria and Progression

- Kasiske, et al. 1993
- Gansevoort, et al. 1995
- Maki, et al. 1995
- Giatras, et al. 1997
- Psait, et al. 2000

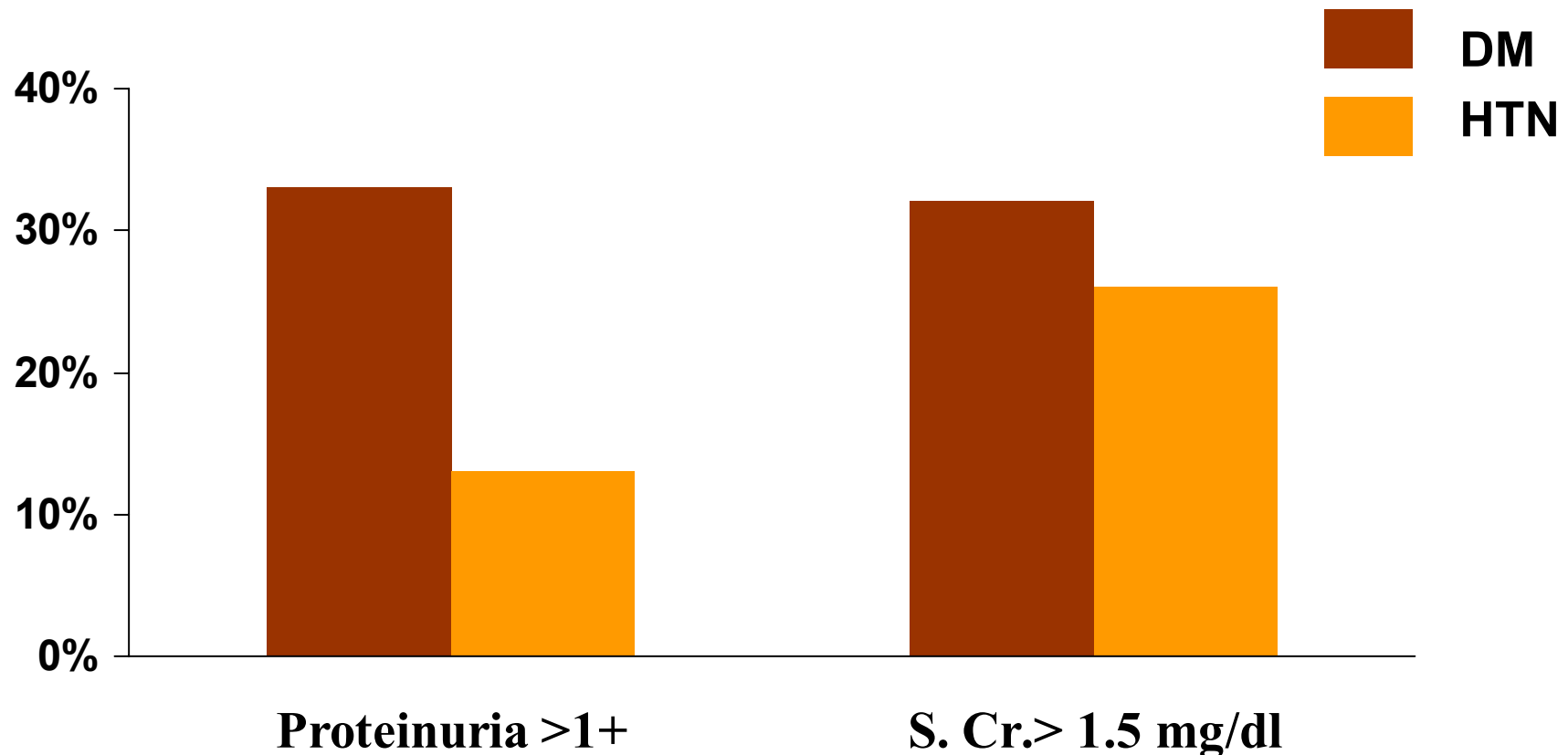
Meta-Analyses

Low Protein Diets Lessen Progression

- Fouque, et al. 1992
- Pedrini, et al. 1996
- Kasiske, et al. 1998

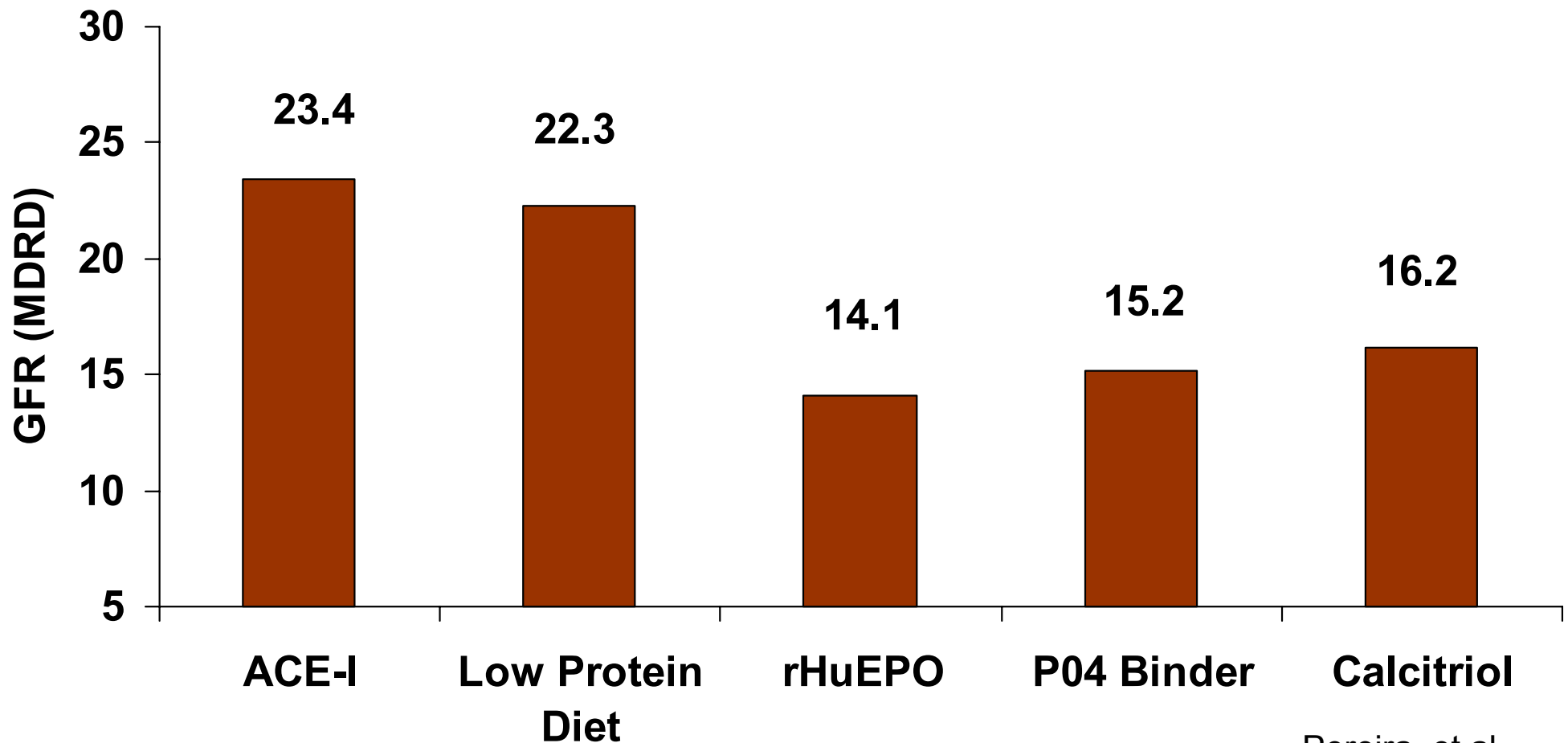
Meta-Analyses

Strategies to Delay Progression are Infrequently Employed



Patients Discharged on ACEI

GFR at Initiation of Selected Therapies in the Management of Renal Insufficiency



Some Solutions



Heighten Awareness and Education for:

- High Risk Groups
- Primary Care Providers



Encourage System Level Improvements, e.g.

- Electronic Prompts
- Routine reporting of calculated GFRs
- Performance measured for QI/QA
- Innovative Care Delivery



Deepen Understanding of Epidemiology



Find Better Disease / Risk Markers



Devise Better Therapies